Watauga County
Bridge No. 29 on US 321 over Cove Creek
Federal Aid Project No. BRNHS-321(13)
W.B.S. No. 38461.1.1
T.I.P. No. B-4668

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

4/13/11
DATE

For Gregory J. Thorpe, PhD,
Environmental Management Director, PDEA

4-15-11
DATE

For John F. Sullivan, III, Division Administrator
Federal Highway Administration

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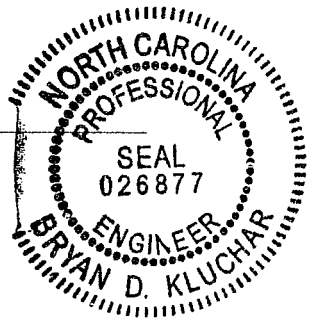
Documentation Prepared in
Project Development and Environmental Analysis Branch By:

4-12-11
DATE

Gregory M. Blakeney
Project Planning Engineer
Bridge Project Development Unit

4/13/11
DATE

Bryan D. Kluchar
Bryan Kluchar, PE
Project Engineer
Bridge Project Development Unit



PROJECT COMMITMENTS:

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All standard procedures and measures, including NCDOT's Best Management Practices for Protection of Surface Waters, Guidelines for Best Management Practices for Bridge Demolition and Removal, will be implemented, as applicable, to avoid or minimize environmental impacts. The following special commitments have been agreed to by NCDOT:

Division 11 Construction:
In order to allow Emergency Management Services (EMS) time to prepare for road closure, the NCDOT Resident Engineer will notify the Director of the Watauga County EMS at (828) 264-4235 of the bridge removal 30 days prior to road closure.

In order to allow Watauga County Schools to prepare for road closure, the NCDOT Resident Engineer will notify the Transportation Director at (828) 264-6391 of the bridge removal 30 days prior to road closure.

This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

Hydraulic Unit – FEMA Coordination:
The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), the delegated state agency for administering FEMA's National Flood Insurance Program, to determine status of project with regard to applicability of NCDOT's Memorandum of Agreement with FMP (dated 6/5/08), or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

Structure Design Unit:
Approval under Section 26a of the Tennessee Valley Authority (TVA) Act will be determined. A copy of the approved Categorical Exclusion document will be provided to TVA and the Structural Design Unit shall further coordinate with TVA if permits are required.

Division 11 Construction and Roadside Environmental Unit:
Cove Creek is a NCWRC Hatchery Supported Trout Stream with some populations of wild trout as well. The following will be implemented to minimize impacts to their habitat:

- In stream construction and land disturbance within the 25-foot buffer is prohibited during the trout-spawning period of October 15 to April 15 to avoid impacts on trout reproduction.
- Sedimentation and erosion control measures shall adhere to Design Standards in Sensitive Watersheds.

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INTRODUCTION: Bridge No. 29 is included in the latest approved North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and is eligible for the Federal-Aid Highway Bridge Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED STATEMENT

NCDOT Bridge Management Unit records indicate Bridge No. 29 has a sufficiency rating of 53.8 out of a possible 100 for a new structure. The sufficiency rating has improved from a rating of 47.3 due to recent improvements to the structure. The bridge is considered functionally obsolete due to deck geometry of 2 out of 9 according to Federal Highway Administration (FHWA) standards and therefore eligible for FHWA's Highway Bridge Program.

Bridge No. 29 carries 6,400 vehicles per day with 11,200 vehicles per day projected for the future. Components of both the concrete superstructure and substructure have experienced an increasing degree of deterioration that can no longer be addressed by maintenance activities. The bridge is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations.

II. EXISTING CONDITIONS

The project is located in western Watauga County, seven miles west of Boone. Bridge Number 29 crosses Cove Creek on US 321 near the Sugar Grove Community approximately one mile west of US 421 and 10 miles east of the Tennessee border (see Figure 1). Development in the area is predominately pastureland and rural residences. The center of the Sugar Grove Community is located just east of the bridge and includes a gas station/grocery store, a post office, and a fire department.

US 321 is classified as a rural arterial in the Statewide Functional Classification System and it is a National Highway System Route.

In the vicinity of the bridge, US 321 has a 22-foot pavement width with grass shoulders. The roadway grade is level through the project area. The existing bridge is on a tangent. The roadway is situated approximately 15.0 feet above the creek bed.

Bridge No. 29 is a two-span structure that consists of reinforced concrete deck girders with an asphalt-wearing surface. The end bents are reinforced concrete with the interior bent being a

reinforced concrete round nose post and webb. The existing bridge was constructed in 1936. The overall length of the structure is 84 feet. The bridge clear roadway width is 24 feet. There is no posted weight limit requirement on this bridge.

There are no utilities attached to the existing structure, but overhead power lines cross US 321 west of the bridge. Aerial telephone cable crosses Cove Creek upstream from the bridge and over US 321 west approach then goes underground on the south side of US 321 heading west. Underground copper cable runs along the north side of US 321 and goes aerial over Cove Creek and returns underground. There is also underground fiber-optic cable on the north side of US 321 that is underneath the streambed. Utility impacts are anticipated to be high.

The current traffic volume of 6,400 vehicles per day (VPD) is expected to increase to 11,200 VPD by the year 2035. The projected volume includes two percent truck-tractor semi-trailer (TTST) and four percent dual-tired vehicles (DT). The posted speed limit is 35 miles per hour in the project area. Sixteen school buses cross the bridge daily on their morning and afternoon routes.

There were five accidents reported in the vicinity of Bridge No. 29 during a recent three-year period. None of the five accidents were associated with the alignment or geometry of the bridge or its approach roadway.

This section of US 321 is not part of a designated bicycle route nor is it listed in the T.I.P. as needing incidental bicycle accommodations. However, according to the Watauga County Planning office and local bicycle groups, there is high bicycle usage on this facility. There is an offset width of eight feet and eleven inches on each side across the new structure and four-foot full depth paved shoulders on both sides of US 321 will accommodate bicycle traffic along the facility. Sidewalks do not exist on the existing bridge and there is no indication of pedestrian usage on or near the bridge. No temporary bicycle or permanent pedestrian accommodations are required for this project.

III. ALTERNATIVES

A. Project Description

The replacement structure will consist of a bridge approximately 100-foot long. The bridge length is based on preliminary design information and is set by hydraulic requirements. The bridge will be of sufficient width to provide for two 12-foot lanes with 8-foot 11-inch offsets on each side. The roadway grade of the new structure will be approximately the same as the existing grade.

The existing roadway will be widened to a 32-foot pavement width to provide two 12-foot lanes and 4-foot paved shoulders. The total shoulder width will be eight-foot (eleven-foot with guardrail) will be provided on each side; four feet of which will be paved in accordance with the current NCDOT Paved Shoulder Policy (The shoulder will include three additional feet where guardrail is required). This roadway will be designed as a rural arterial.

B. Reasonable and Feasible Alternatives

One alternative for replacing Bridge No. 29 that was studied in detail are described below.

Alternate 1

Alternate 1 involves replacement of the structure along the existing roadway alignment. Improvements to the approach roadways will be required for a distance of approximately 560 feet to the west and 490 feet to the east of the new structure. This alternate will be designed using Statewide Tier guidelines with a design speed of 40 miles per hour. No design exception anticipated for this project.

Due to the condition of the network of roads and substandard bridges in within the project area, there is not a suitable detour route that meets NCDOT's criteria for offsite detours. Compounded by the high volume of traffic that is serviced by US 321 and the anticipated increase in response time by the Watauga County EMS, an offsite detour would not be acceptable. While project costs and environmental impacts will be higher, maintenance of traffic onsite during construction is mandatory.

Traffic will be maintained onsite during construction with the use of a temporary detour bridge to the north of the existing structure. The temporary structure will be approximately 115 feet in length with a roadway elevation approximately the same as the existing structure. The detour structure will have a clear deck width of 30 feet, which will provide two 11-foot lanes with 4-foot offsets. The detour roadway approaches will provide two 11-foot lanes with 2-foot full depth paved shoulders.

C. Alternatives Eliminated From Further Consideration

Another alternate that involved replacement of the structure along the existing roadway alignment was evaluated. The temporary detour structure would have been located to the south of the existing bridge to serve as an on-site detour. This alternative would have relocated two residential homes and was eliminated from consideration.

The "do-nothing" alternative will eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by US 321.

"Rehabilitation" of the old bridges is not practical due to their age and deteriorated condition. The concrete elements of the existing structures have all deteriorated to a point where maintenance activities will be impractical and too costly for repair and rehabilitation.

D. Preferred Alternative

Bridge No. 29 will be replaced at the existing location as shown by Alternative 1 in Figure 2. NCDOT Division 11 concurs with the selection of Alternative 1 as the preferred alternative.

IV. ESTIMATED COSTS

The estimated costs, based on 2011 prices, are as follows:

	Alternative 1 Preferred
Structure	$ 492,000
Roadway Approaches	$ 635,000
Detour Structure and Approaches	$ 306,000
Structure Removal	$ 34,000
Misc. & Mob.	$ 243,000
Eng. & Contingencies	$ 290,000
Total Construction Cost	$ 2,000,000
Right-of-way Costs	$ 478,000
Utility Costs	$ 117,000
Total Project Cost	$ 2,595,000

V. NATURAL ENVIRONMENT

Physical Characteristics

The project study area lies in the mountain physiographic region of North Carolina. Topography in the project vicinity is comprised of rolling mountains and hills with moderate to steep slopes and narrow level floodplains along streams. Elevations in the study area range from 2,600 to 2,700 feet above sea level. Land use in the project vicinity consists primarily of forestland interspersed with agriculture and residential development along roadways.

Water Resources

Water resources in the study area are part of the Watauga River Basin (US Geological Service Hydrologic Unit 06010103). Two streams were identified in the study area (Table 2). The physical characteristics of the streams are provided in Table 3.

Table 2. Water resources in the project study area.

Stream Name	DWQ Index Number	Best Usage Classification
Cove Creek	8-15	C
UT1 to Cove Creek	8-15	C

Table 3. Physical characteristics of water resources in the project study area.

Map ID	Bank Height (ft)	Bankful Width (ft)	Water Depth (ft)	Channel Substrate	Flow	Clarity
Cove Creek	15	40	2	Sand, boulders & bedrock	Fast	High
UT1 to Cove Creek	6	5	0	Clay & sand	NA	NA

No designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1.0 mile of the project. The NC Wildlife Resources Commission (WRC) has identified Cove Creek as designated trout water. The North Carolina 2006 Final 303(d) list of impaired waters does not list any streams due to excessive sedimentation within 1.0 mile of the project.

A Benthic monitoring station is located in Cove Creek at the location of Bridge Number 29. Samples were taken July 13, 1999 and given a rating of "Good." No fish surveys occur on or near the project site.

Biotic Resources

Two terrestrial communities were identified in the project study area: maintained community and mesic mixed hardwood forest. A brief description of each community type follows. The proposed bridge replacement is expected to have relatively minimal impacts on biotic communities due to the limited extent of infringement on natural communities. The majority of vegetative communities likely to be impacted by the proposed bridge replacement project consist of disturbed (maintained) right-of-way and landscaped residential properties.

Table 4. Coverage of terrestrial natural communities in the project study area.

Community	Coverage (ac.)
Maintained Community	1.5
Mesic Mixed Hardwood Forest	32.6
Total	34.1

Jurisdictional Topics

Surface Waters

Two jurisdictional streams, Cove Creek and UT1 to Cove Creek, were identified in the project study area (Table 5). UT1 to Cove Creek was determined to be an un-important intermittent

stream channel by the USACE through a desktop verification. Cove Creek has been designated as a cold water stream for the purposes of stream mitigation.

Table 5. Jurisdictional characteristics of water resources in the project study area.

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	Buffer Rules
Cove Creek	1,840	Perennial	Yes	Not subject
UT1 to Cove Creek	115	Intermittent	No	Not subject

No jurisdictional wetlands were identified within the project study area.

Clean Water Act Permits

The proposed project has been designated as a CE for the purposes of NEPA documentation. As a result, a Nationwide Permit 23 will likely be applicable. Other permits that may apply include a NWP No. 33 for temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge construction or rehabilitation. The USACE holds the final discretion as to what permit will be required to authorize project construction.

In addition to the 404 permit, other required authorizations include the corresponding Section 401 Water Quality Certification (WQC) from the NCDWQ. A NCDWQ Section 401 Water Quality General certification for a Categorical Exclusion may be required prior to the issuance of a Section 404 Permit. Other required 401 certifications may include a GC 3668 for temporary construction access and dewatering.

Construction Moratoria

Cove Creek has been designated by WRC as a trout water and supports trout in the vicinity of the project. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer has been recommended from October 15 to April 15 by the WRC, per letter from WRC dated February 2008.

N.C. River Basin Buffer Rules

Cove Creek is located within the Watauga River Basin. Currently there are no Buffer Rules administrated by the DWQ within the Watauga River Basin.

Rivers and Harbors Act Section 10 Navigable Waters

Cove Creek is not designated as a Navigable Water under Section 10 of the Rivers and Harbors Act, according to information obtained from the USACE Asheville Office.

Mitigation

Avoidance and Minimization of Impacts

Cove Creek and its tributaries in the project study area have been designated Class C water by DWQ. Cove Creek has been designated as trout water by WRC; therefore Design Standards for Sensitive Watersheds will be implemented during project construction.

The NCDOT has made every effort to avoid and minimize impacts to streams and wetlands to the greatest extent practicable when choosing the preferred alternative and during project design.

Compensatory Mitigation of Impacts

The NCDOT will investigate potential on-site stream and wetland mitigation opportunities now that a final decision has been rendered with regard to the location of the preferred alternative. If on-site mitigation is not feasible, mitigation will be provided by North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP). In accordance with the "Memorandum of Agreement Among the North Carolina Department of Transportation, and the U.S. Army Corps of Engineers, Wilmington District" (MOA), July 22, 2003, the EEP, will be requested to provide off-site mitigation to satisfy the federal Clean Water Act compensatory mitigation requirements for this project.

Federally Protected Species

As of September 22, 2010 the USFWS lists eight federally protected species for Watauga County (Table 6).

Table 6. Federally protected species listed for Watauga County.

Scientific Name	Common Name	Federal Status	Biological Conclusion	Habitat Present
Clemmys muhlenbergii	Southern Bog Turtle	T (S/A)	NA	No
Glaucomys sabrinus coloratus	Carolina northern flying squirrel	E	No Effect	No
Corynorhinus townsendii virginianus	Virginia big ear bat	E	May Affect, Not Likely to Adversely Affect	Yes
Microhexura montivaga	Spruce-fir moss spider	E	No Effect	No
Solidago spithamaea	Blue ridge goldenrod	T	No Effect	No
Liatris helleri	Heller's Blazing Star	T	No Effect	No
Hedyotis purpurea var. montana	Roan Mountain Bluet	E	No Effect	No
Geum radiatum	Spreading Avens	E	No Effect	No

E - Endangered
T - Threatened
T(S/A) - Threatened due to similarity of appearance

Virginia big-eared bat
Habitat Requirements:
This bat roosts in caves year round, preferring cold caves (34-50 degrees Fahrenheit) for winter hibernation and warmer caves (60-65 degrees Fahrenheit) for summer roosts. During the summer, females gather in maternity caves to give birth and rear the young, while males gather in smaller groups in separate caves. Virginia big-eared bats are insectivores, consuming moths, beetles, flies, wasps, and winged ants.

Biological Conclusion: May Affect, Not Likely to Adversely Affect
A survey of the project was conducted on February 14, 2008. The bridge is a very open habitat, with no protection from the wind. The underside of the bridge was checked for evidence of bats but none were found. However, it is possible that the bridge could have some light use in the summer by bats.

Bald and Golden Eagle Protection Act
Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within 1.0 mile of open water. Suitable habitat for bald eagle in the form of large water bodies do not exist within 1.0 mile of the project.

VI. HUMAN ENVIRONMENT

Section 106 Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at Title 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and afford the Advisory Council a reasonable opportunity to comment on such undertakings.

Historic Architecture

The State Historic Preservation Office (SHPO) reviewed the subject project and determined that no surveys are required (see letter dated April 29, 2009).

Archaeology

The State Historic Preservation Office (SHPO) reviewed the subject project. Due to the temporary onsite detour, surveys were required. The archaeological investigation was completed on October 1, 2010. There are no archaeological sites found eligible for the National Registry within the proposed project area. NCDOT is currently awaiting a letter of concurrence from SHPO.

Community Impacts

No adverse impact on families or communities is anticipated. Right-of-way acquisition will be limited. No relocatees are expected with implementation of the proposed alternative.

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

The project is not in conflict with any plan, existing land use, or zoning regulation. No change in land use is expected to result from the construction of the project.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. All permanent construction will take place along existing alignment. There are no soils classified as prime, unique, or having state or local importance in the vicinity of the project. Therefore, the project will not involve the direct conversion of farmland acreage within these classifications.

The project will not have a disproportionately high and adverse human health and environmental effect on any minority or low-income population.

Noise & Air Quality

The project is located in Watauga County, which has been determined to comply with the National Air Quality Standards. The proposed project is located in an attainment area; therefore, 40 CFR Parts 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.
This project will not result in any meaningful changes in traffic volume, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. As such FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently this effort is exempt from analysis for MSAT's.

Noise levels may increase during project construction; however, these impacts are not expected to be substantial considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

VII. GENERAL ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

The bridge replacement will not have an adverse effect on the quality of the human or natural environment with the use of the current North Carolina Department of Transportation standards and specifications.

The proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Environmental Management, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no underground storage tanks or hazardous waste sites in the project area.

Watauga County is a participant in the National Flood Insurance Program. There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in an impact area of about the same magnitude. The proposed project is not anticipated to increase the level or extent of upstream flood potential.

VIII. COORDINATION & AGENCY COMMENTS

NCDOT has sought input from the following agencies as a part of the project development: U.S. Army Corps of Engineers, NC Department of Environmental and Natural Resources, U.S. Fish & Wildlife Service, N.C Wildlife Resource Commission, U.S. Forest Service, N.C. Division of Parks & Recreation, Eastern Band of Cherokee Indians, Tennessee Valley Authority, High Country Rural Planning Organization, and the Watauga County Planning Department.

The **N.C. Wildlife Resource Commission** in their letter dated February 11, 2008 indicated the following: Cove Creek, Class C waters, supports trout in the vicinity and downstream in the Watauga River, Class B Trout HQW waters. The green floater (*Lasmigona subviridus*), Federal Species of Concern (FSC) and state Endangered (E), and hellbender (*Cryptobranchus alleganiensis*), FSC and state Species of Concern (SC), have been observed at the confluence. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15th to April 15th. Sediment and erosion control measures should adhere to the design standards in sensitive watersheds.

Response: NCDOT will adhere to the moratorium for in-stream work and land disturbance buffer of 25-foot from October 15th to April 15th. Also, Design Standards in Sensitive Watersheds will be adhered to.

The **US Environmental Protection Agency (USEPA)** made the following recommendations: **1.)** Although the Unnamed Tributary (UT 1) to Cove Creek was determined to be an unimportant intermittent stream, USEPA recommends that the stream be avoided to the extent practicable. Cove Creek is a trout stream, and the intermittent UT may provide important water quality improvement and hydrology functions to Cove Creek. In addition, the UT may provide important habitat functions by conveying and contributing natural materials (sticks,

leaf packs, etc.), to help support the habitat of Cove Creek. 2.) Bridge supports should not be placed in the stream, if possible. 3.) Bridge deck drains should not discharge directly into the stream, and stormwater should be pre-treated prior to discharge to a stream.

Response: UT 1 will not be in the construction limits of this project. **NCDOT** will implement Design Standards in Sensitive Watersheds to minimize impacts streams in the project area

The U.S. Army Corps of Engineers, NC Department of Environmental and Natural Resources, U.S. Fish & Wildlife Service, U.S. Forest Service, N.C. Division of Parks & Recreation, Eastern Band of Cherokee Indians, Tennessee Valley Authority, High Country Rural Planning Organization, and the Watauga County Planning Department had no special concerns for this project.

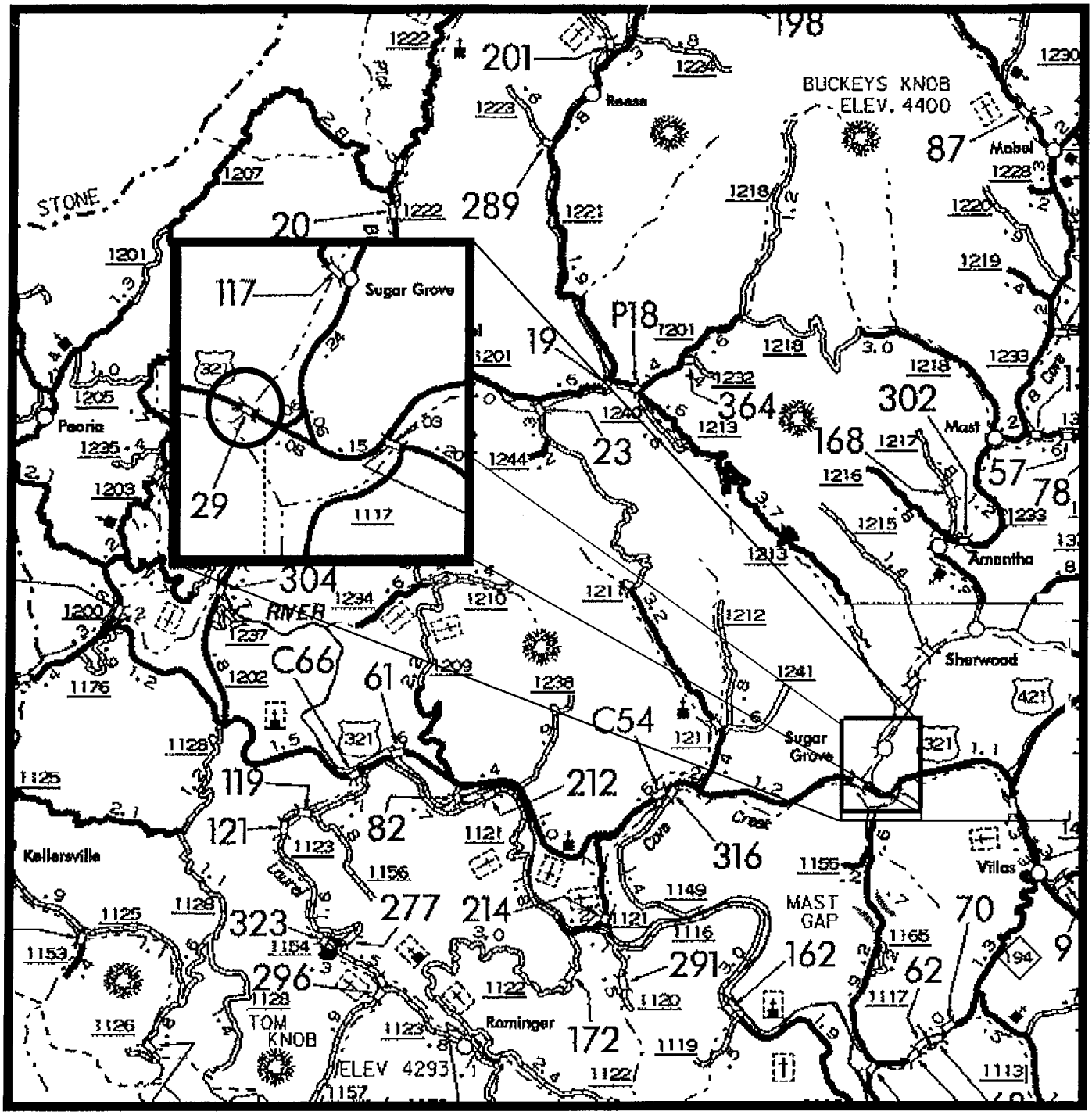
IX. PUBLIC INVOLVEMENT

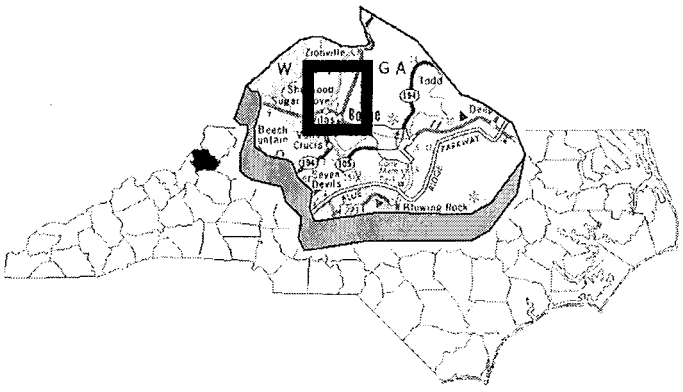
A letter was sent by the Location & Surveys Unit to all property owners affected directly by this project. Property owners were invited to comment. No comments have been received to date.

There is not substantial controversy on social, economic, or environmental grounds concerning the project.

X. CONCLUSION

On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project. The project is therefore considered to be a federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.





NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

WATAUGA COUNTY
REPLACE BRIDGE 29 ON US 321
OVER COVE CREEK
B-4668

Figure 1

North Carolina Department of Transportation
Division of Highways
Project Development & Environmental Analysis Branch

Watauga County
Replace Bridge No. 29 on US 321
Over Cove Creek
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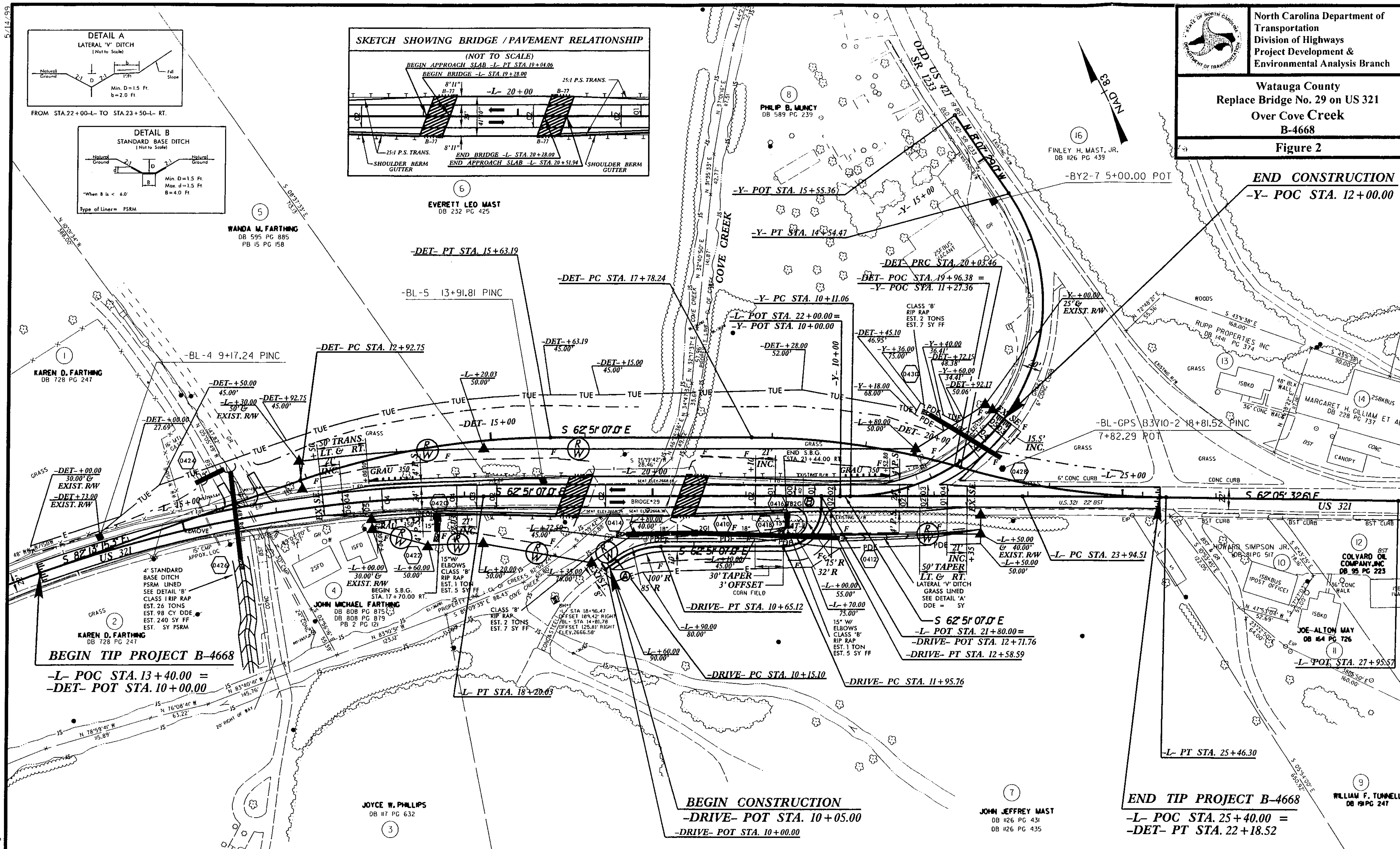
Figure 2



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PI Sta 14+29.65	PI Sta 24+70.41	PI Sta 14+29.27	PI Sta 18+91.60	PI Sta 21+11.65	PI Sta 14+02.91	PI Sta 10+40.96	PI Sta 12+35.76
PC Sta 10+17.17	Δ = 0° 45' 34.4" (RT)	Δ = 19° 22' 08.2" (RT)	Δ = 16° 07' 49.4" (RT)	S 62° 07' 26.16" E (AHEAD)	Δ = 125° 16' 22.0" (LT)	Δ = 35° 49' 34.3" (RT)	Δ = 90° 00' 00.0" (LT)
N 84° 45' 11.40" E (BACK)	D = 0° 30' 01.4"	D = 7° 09' 43.1"	D = 7° 09' 43.1"	Δ = 15° 24' 08.5" (LT)	D = 28° 15' 08.5"	D = 71° 37' 11.0"	D = 143° 14' 22.0"
Δ = 32° 23' 41.6" (RT)	L = 151.79'	L = 270.44'	L = 225.22'	D = 7° 09' 43.1"	L = 443.41'	L = 50.02'	L = 62.83'
D = 4° 02' 05.7"	T = 75.90'	T = 136.52'	T = 113.36'	L = 215.06'	T = 391.85'	T = 25.86'	T = 40.00'
L = 802.86'	R = 11,450.00'	R = 800.00'	R = 800.00'	T = 108.18'	R = 202.80'	R = 80.00'	R = 40.00'
T = 412.48'	SE = NC	SE = 0.04	SE = 0.04	R = 800.00'	SE = SEE PLANS	SE = NC	SE = NC
R = 1,420.00'		RO = SEE PLANS	RO = SEE PLANS	SE = SEE PLANS	RO = SEE PLANS	Ⓐ N 81° 19' 18.7" E	Ⓑ N 27° 08' 53.0" E
SE = 0.04				RO = SEE PLANS			
RO = SEE PLANS							

— - — - - DETOUR SLOPE STAKE LINE

NOTES:
1.) FOR -DET- PLAN VIEW SEE SHEET 2-B.
2.) FOR -L- AND -DET- PROFILE SEE SHEET 5.
3.) FOR -Y- AND -DRIVE- PROFILE SEE SHEET 6.
4.) ALL DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE ON PLANS.
5.) FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-XX.

5/14/99

15-DEC-2010 10:34
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North Carolina Department of Transportation
Division of Highways
Project Development &
Environmental Analysis Branch

Watauga County
Replace Bridge No. 29 on US 321
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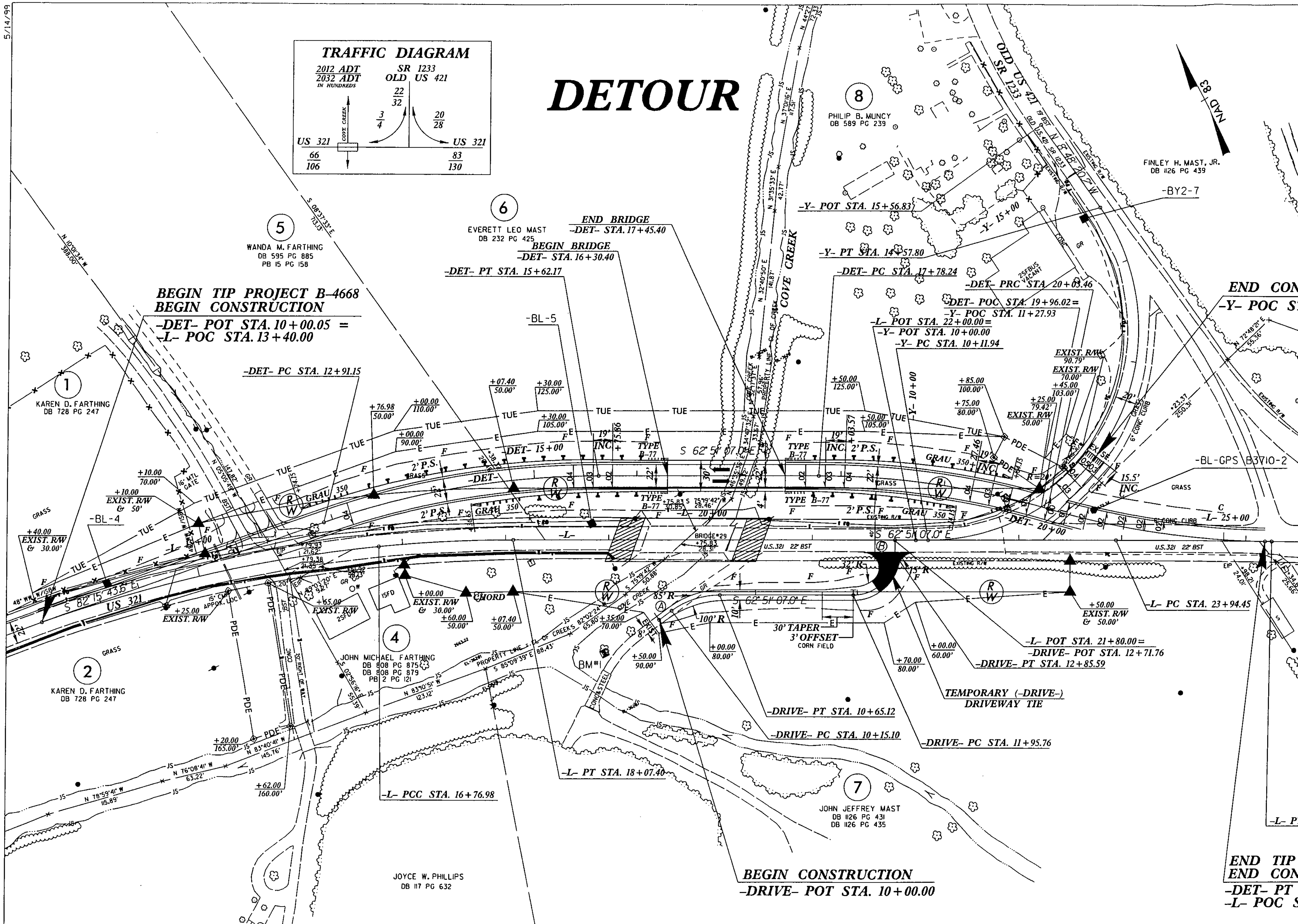
Figure 3


DETOUR
TRAFFIC DIAGRAM
2012 ADT
2032 ADT
IN HUNDREDS
SR 1233
OLD US 421
22/32
3/4
20/28
COVE CREEK
US 321
66/106
US 321
83/130
NAD 83
BEGIN TIP PROJECT B-4668
BEGIN CONSTRUCTION
-DET- POT STA. 10+00.05 =
-L- POC STA. 13+40.00
-DET- PC STA. 12+91.15
-DET- PT STA. 15+62.17
BEGIN BRIDGE
-DET- STA. 16+30.40
END BRIDGE
-DET- STA. 17+45.40
-DET- PC STA. 17+78.24
-DET- PRC STA. 20+03.46
-DET- POC STA. 19+96.02 =
-Y- POC STA. 11+27.93
-L- POT STA. 22+00.00 =
-Y- POT STA. 10+00.00
-Y- PC STA. 10+11.94
-Y- POT STA. 15+56.83
-Y- PT STA. 14+57.80
END CONSTRUCTION
-Y- POC STA. 12+00.00
-BY2-7
-BL-4
-BL-5
-BL-GPS B3710-2
BRIDGE #29
COVE CREEK
OLD US 421
SR 1233
US 321
S 82° 15' 43.6" E
S 62° 51' 07.0" E
S 62° 05' 32.61" E
-L- PCC STA. 16+76.98
-L- PT STA. 18+07.40
-L- PC STA. 23+94.45
-L- PT STA. 25+46.36
-L- POT STA. 27+95.57
-L- POT STA. 21+80.00 =
-DRIVE- POT STA. 12+71.76
-DRIVE- PT STA. 12+85.59
TEMPORARY (-DRIVE-)
DRIVEWAY TIE
-DRIVE- PT STA. 10+65.12
-DRIVE- PC STA. 10+15.10
-DRIVE- PC STA. 11+95.76
30' TAPER
3' OFFSET
CORN FIELD
BEGIN CONSTRUCTION
-DRIVE- POT STA. 10+00.00
END TIP PROJECT B-4668
END CONSTRUCTION
-DET- PT STA. 22+18.52 =
-L- POC STA. 25+40.00
1
KAREN D. FARTHING
DB 728 PG 247
2
KAREN D. FARTHING
DB 728 PG 247
4
JOHN MICHAEL FARTHING
DB 808 PG 875
DB 808 PG 879
PB 2 PG 121
5
WANDA M. FARTHING
DB 595 PG 885
PB 15 PG 158
6
EVERETT LEO MAST
DB 232 PG 425
7
JOHN JEFFREY MAST
DB 1126 PG 431
DB 1126 PG 435
8
PHILIP B. MUNCY
DB 589 PG 239
FINLEY H. MAST, JR.
DB 1126 PG 439
RUPP PROPERTIES INC
DB 1441 PG 374
MARGARET H. GILLIAM ET AL
DB 228 PG 737
HOWARD SIMPSON JR.
DB 81 PG 517
COLVARD OIL
COMPANY, INC
DB 95 PG 223
JOE ALTON MAY
DB 164 PG 726
WILLIAM F. TUNNELL
DB 191 PG 247
JOYCE W. PHILLIPS
DB 117 PG 632
BM#1
ISBKBUS
(POST OFFICE)
WOODS
GRASS
CANOPY

-L-			-DET-			-Y-	-DRIVE-	
PI Sta 13+53.05 PC Sta 10+17.06 N 84° 45' 11.37" E (BACK) Δ = 26° 32' 02.1" (RT) D = 4° 01' 14.7" L = 659.92' T = 335.99' R = 1,425.00' SE = 0.04 RO = SEE PLANS	PI Sta 17+42.25 Δ = 5° 51' 39.5" (RT) D = 4° 29' 37.6" L = 130.42' T = 65.27' R = 1,275.00' SE = 0.04 RO = SEE PLANS	PI Sta 24+70.41 Δ = 0° 45' 34.4" (RT) D = 0° 30' 00.0" L = 151.91' T = 75.96' R = 11,459.16' SE = NC	PI Sta 14+27.97 Δ = 19° 24' 36.6" (RT) D = 7° 09' 43.1" L = 271.02' T = 136.82' R = 800.00' SE = 0.04 RO = SEE PLANS	PI Sta 18+91.60 Δ = 16° 07' 49.4" (RT) D = 7° 09' 43.1" L = 225.22' T = 113.36' R = 800.00' SE = 0.04 RO = SEE PLANS	PI Sta 21+11.64 S 62° 07' 27.17" E (AHEAD) Δ = 15° 24' 09.5" (LT) D = 7° 09' 43.1" L = 215.06' T = 108.18' R = 800.00' SE = SEE PLANS RO = SEE PLANS	PI Sta 14+09.59 Δ = 125° 57' 13.2" (LT) D = 28° 15' 00.0" L = 445.85' T = 397.65' R = 202.82' SE = SEE PLANS RO = SEE PLANS	PI Sta 10+40.96 Δ = 35° 49' 34.3" (RT) D = 71° 37' 11.0" L = 50.02' T = 25.86' R = 80.00' SE = NC (A) N 81° 19' 18.7" E	PI Sta 12+35.76 Δ = 90° 00' 00.0" (LT) D = 143° 14' 22.0" L = 62.83' T = 40.00' R = 40.00' SE = NC (B) N 27° 08' 53.0" E

TEMPORARY DRIVEWAY TIE

NOTES:
1.) FOR -L- PLAN VIEW SEE SHEET 4.
2.) FOR -L- AND -DET- PROFILE SEE SHEET 5.
3.) FOR -Y- AND -DRIVE- PROFILE SEE SHEET 6.
4.) ALL RIGHT OF WAY AND EASEMENTS ARE REFERENCED FROM -L-.
5.) ALL DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE ON PLANS.
6.) FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-X.

North Carolina Wildlife Resources Commission

TO: Carla Dagnino, Project Management, Western Region, NEU
Project Development and Environmental Analysis, NCDOT

FROM: Marla Chambers, Western NCDOT Permit Coordinator Marla Chambers
Habitat Conservation Program, NCWRC

DATE: February 11, 2008

SUBJECT: Scoping review of NCDOT's proposed bridge replacement projects in Buncombe, Clay Henderson, Madison, Mitchell, Surry, Transylvania, Watauga and Yancey Counties. TIP Nos. B-4715, B-4733, B-4547, B-4987, B-4988, B-4984, B-4581, B-4820, B-4989, B-5010, B-4668, B-4687, B-4851.

North Carolina Department of Transportation (NCDOT) has requested comments from the North Carolina Wildlife Resources Commission (NCWRC) regarding impacts to fish and wildlife resources resulting from the subject projects. Staff biologists have reviewed the information provided. The following preliminary comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

Our standard recommendations for bridge replacement projects of this scope are as follows:

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.

2. Bridge deck drains should not discharge directly into the stream.

3. Live concrete should not be allowed to contact the water in or entering into the stream.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 707-0220 • **Fax:** (919) 707-0028

4. If possible, bridge supports (bents) should not be placed in the stream.

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the stream underneath the bridge.

7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.

8. In streams that contain threatened or endangered species, Mr. Logan Williams with the NCDOT - ONE should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.

9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.

10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.

11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.

12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.

13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.

14. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.

15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

16. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

17. If culvert installation is being considered, conduct subsurface investigations prior to structure design to determine design options and constraints and to ensure that wildlife passage issues are addressed.

If corrugated metal pipe arches, reinforced concrete pipes, or concrete box culverts are used:

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream end to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, the base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.

2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.

3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

4. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be professionally designed, sized, and installed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. Tall fescue should not be used in riparian areas. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-4715, Buncombe Co., Bridge No. 655 over Broad River on SR 2797 (Rock Creek Rd.). Broad River, Class C Trout waters, is expected to support rainbow trout. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from January 1-April 15 to protect the egg and fry stages of rainbow trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
2. B-4733, Clay Co., Bridge No. 11 over Chatuge Lake on NC 175. Chatuge Lake, Class C Trout, is not expected to have reproducing trout. The hellbender (*Cryptobranchus alleganiensis*), Federal Species of Concern (FSC) and state Special Concern (SC) has been observed at the project site. Sediment and erosion control should be well maintained. No additional concerns are indicated at this time. Standard recommendations should apply.
3. B-4547, Henderson Co., Bridge No. 45 over Devil Forks Creek on SR 1525 (Dana Rd.). No special concerns are indicated at this time. Standard recommendations should apply.
4. B-4987, Henderson Co., Bridge No. 35 over Clear Creek on SR 1572 (Apple Valley Rd.). Clear Creek is classified B Trout waters; however it is also on the 303(d) list of impaired waters. The stream is designated Hatchery Supported Designated Public Mountain Trout Water from the subject bridge upstream and the blotched chub (*Erimystax insiginis*), FSC and state Significantly Rare (SR) occurs downstream. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from January 1-April 15 to protect the egg and fry stages of rainbow trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds. Public access should be coordinated for this site according to NCDOT guidelines and agreements with NCWRC.
5. B-4988, Henderson Co., Bridge No. 309 over Featherstone Creek on SR 1528. Featherstone Creek, Class C waters, may support rainbow trout; however we will not request a moratorium at this time. If trout are confirmed to be in the area prior to project construction, the rainbow trout moratorium may be requested.
6. B-4984, Madison Co., Bridge No. 138 over Big Pine Creek on SR 1151 (Big Pine Rd.?). Big Pine Creek, Class C waters, is Hatchery Supported Designated Public Mountain Trout Water; however significant trout reproduction is not expected this close to the confluence with the French Broad River. Logperch (*Percina caprodes*), state Threatened (T), have been observed at this confluence and the olive darter (*Percina squamata*), FSC and state SC; mountain madtom (*Noturus eleutherus*), state SC; and blotched chub, FSC and state SR; are found downstream in the French Broad River. Stringent sedimentation and erosion control

must be well maintained. Public access should be coordinated for this site according to NCDOT guidelines and agreements with NCWRC.

7. B-4581, Mitchell Co., Bridge No. 57 over White Oak Creek on SR 1199. White Oak Creek, Class C Trout waters, is not expected to have significant trout reproduction; however it flows into Cane Creek, which is managed as Delayed Harvest Trout waters by NCWRC and supports the olive darter (*Percina squamata*), FSC and state SC. The state and federally Endangered (E) Appalachian elktoe (*Alasmidonta raveneliana*) inhabits North Toe River further downstream. Stringent sedimentation and erosion control must be well maintained.
8. B-4820, Surry/Yadkin Co., Bridge No. 338 over the Yadkin River on SR 1420 and SR 1190 (Gwyn Street). The Yadkin River, Class C waters, supports good numbers of spotted bass and smallmouth bass in the area. Stringent sediment and erosion control should be well maintained. No additional concerns are indicated at this time. Standard recommendations should apply.
9. B-4989, Transylvania Co., Bridge No. 148 over Lamance Creek on SR 1326. Lamance Creek, Class C Trout waters, is located in the Nantahala National Forest Game Land and is classified Wild Trout Waters by NCWRC. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds. Public access should be coordinated for this site according to NCDOT guidelines and agreements with NCWRC.
10. B-5010, Transylvania Co., Bridge No. 27 over Rock Creek on US 64. Rock Creek, Class C Trout waters, supports brown trout in the project area. Oconee stream crayfish (*Cambarus chaugaensis*), state SC; bog turtle, (*Glyptemys muhlenbergii*), state T and federal T due to Similarity of Appearance; and green salamander (*aneides aeneus*), FSC and state E, are found nearby. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
11. B-4668, Watauga Co., Bridge No. 29 over Cove Creek on US 321. Cove Creek, Class C waters, supports trout in the vicinity and downstream in the Watauga River, Class B Trout HQW waters. The green floater (*Lasmigona subviridus*), FSC and state E, and hellbender (*Cryptobranchus alleganiensis*), FSC and state SC, have been observed at the confluence. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from October 15 to April 15. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
12. B-4687, Yancey Co., Bridge No. 105 over Little Creek on SR 1411. Little Creek, Class C Trout waters, supports rainbow trout in the project area and flows to the Cane River, also Class C Trout waters. The Appalachian elktoe (*Alasmidonta raveneliana*), federal and state E; sharphead darter (*Etheostoma acuticeps*), FSC and state T; and stonecat (*Noturus flavus*), state E, occur in Cane River. A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer is recommended from January 1-April 15 to protect the egg and fry stages of rainbow trout. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.
13. B-4851, Yancey Co., Bridge No. 31 over Brush Creek on SR 1308. Brush Creek, Class C Trout waters, is not expected to support reproducing trout in the project area. It joins the North Toe River, Class C Trout waters, just downstream, which is inhabited by the Appalachian elktoe (*Alasmidonta raveneliana*), federal and state E, and wavy-rayed

lampmussel (*Lampsilis fasciola*), state SC. Sediment and erosion control measures should adhere to the design standards for sensitive watersheds.

We request that NCDOT routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. The NCDOT should install and maintain sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks, reducing habitat fragmentation and vehicle related mortality at highway crossings.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (704) 984-1070. Thank you for the opportunity to review and comment on this project.

cc: Brian Wrenn, NCDWQ
Marella Buncick, USFWS
Angie Rodgers, NCNHP
Elizabeth Lusk, NCDOT

North Carolina Department of Cultural Resources

State Historic Preservation Office

Peter B. Sandbeck, Administrator

Beverly Eaves Perdue, Governor
Linda A. Carlisle, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

April 29, 2009

MEMORANDUM

TO: Bryan Kluchar
Bridge Project Development Unit
North Carolina Department of Transportation

FROM: Peter Sandbeck RSE for Peter Sandbeck

SUBJECT: Bridge 29 on US 321 over Cove Creek, B-4668, Watauga County, ER 09-0891

Thank you for your letter of April 9, 2009, concerning the above project.

There are no recorded archaeological sites within the proposed project area. If the replacement is to be located along the existing alignment, it is unlikely that significant archaeological resources would be affected and no investigations would be recommended. If, however, the replacement is to be in a new location, please forward a map to this office indicating the location of the new alignment so we may evaluate the potential effects of the replacement upon archaeological resources.

We have determined that the project as proposed will not have an effect on any historic structures.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/807-6579. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Matt Wilkerson, NCDOT
Mary Pope Furr, NCDOT

Kluchar, Bryan

From: Matthews.Kathy@epamail.epa.gov
Sent: Monday, July 27, 2009 11:30 AM
To: Kluchar, Bryan
Subject: Comments on Bridge Projects

Dear Bryan,

I have reviewed the request for comments for the bridge projects B-4987, B-4988, B-4989, B-4547, B-4458, B-4668, and B-5010. I have the following comments for your consideration:

B-4547, B-4987, B-4988, and B-4989
1. Bridge supports should not be placed in the stream, if possible.
2. Bridge deck drains should not discharge directly into the stream, and stormwater should be pre-treated prior to discharge to a stream or wetland.
3. Mechanical landclearing adjacent to the bridge should be limited to the extent possible, to avoid impacts to wetlands and streams in the project area.

B-4458
1. It is unclear if a significantly different alignment is proposed for the road. We note that there are no wetlands mapped within the project area. If the road is to be realigned south of the existing bridge, we recommend that UT1 be avoided to the extent practicable (or bridged with the South Fork Catawba River).
2. Bridge supports should not be placed in the stream, if possible.
3. Bridge deck drains should not discharge directly into the stream, and stormwater should be pre-treated prior to discharge to a stream.
4. Mechanical landclearing adjacent to the bridge and realigned roadway should be limited to the extent possible.

B-4668
1. Although the UT 1 to Cove Creek was determined to be an unimportant intermittent stream, EPA recommends that the stream be avoided to the extent practicable. Cove Creek is a trout stream, and the intermittent UT may provide important water quality improvement and hydrology functions to Cove Creek. In addition, the UT may provide important habitat functions by conveying and contributing natural materials (sticks, leaf packs, etc.), to help support the habitat of Cove Creek.
2. Bridge supports should not be placed in the stream, if possible.
3. Bridge deck drains should not discharge directly into the stream, and stormwater should be pre-treated prior to discharge to a stream.

B-5010
1. In general, for all bridge replacements, EPA prefers structures that span the waterbody. Efforts should be made if possible to also span or avoid any other aquatic resources in the project area.
2. EPA also generally prefers the replacement of a bridge in the same location, either with road closure and off-site detour, or staged construction. If a temporary on-site detour is required, it should be designed to avoid impacts to aquatic resources.
3. Bridge supports should not be placed in the stream, if possible.
4. Bridge deck drains should not discharge directly into the stream, and stormwater should be pre-treated prior to discharge to a stream.

Kathy Matthews
USEPA - Region 4 Wetlands & Marine Reg. Section
109 T.W. Alexander Dr.